



SuDS in Schools

Education & Engagement Report

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Introduction

The SuDS in Sutton's Schools (SiSS) Project is a partnership project between the London Borough of Sutton and the South East Rivers Trust, funded by Thames Rivers Trust and the Environment Agency. The primary aim of the project is to alleviate flood risk within Sutton by retrofitting Sustainable Drainage Solutions (SuDS) on school grounds.

In a series of summative reports, the Trust aims to share the expertise and lessons learnt through the various contributions the organisation made to the project; supporting other SuDS in School initiatives in the future.

- 1. SuDS Planter Design**
- 2. SuDS Planter Installation**
- 3. Rain Garden**
- 4. Education & Engagement**
- 5. Monitoring**

All reports can be found and downloaded from the South East Rivers Trust website:

www.southeastriverstrust.org/sudsinschools/

Information on the future of the SiSS Project can be found on Sutton Council's website here:

https://www.sutton.gov.uk/info/200670/environmental_sustainability/2028/suds_in_sutton_schools

The Need for Community Engagement

There has been a real surge of public interest in environmental issues recently. With the need for SuDS greater than it has ever been, it is crucial that this surge of interest is capitalised on to raise awareness of SuDS and get the issue of surface water flooding on the public agenda. While investment from funders and policy makers is growing, an educated public can ramp up the pressure to increase the level of investment and the attention that SuDS receive. Sustainable drainage systems may not have the glamour of other environmental issues but there are ways of successfully engaging the public so they can make informed decisions when it comes to their own properties and behaviour but also provide the public support that is needed to drive real change.

Engaging Staff

In order to establish the required support and commitment from schools for a SuDS project, the advantages of SuDS for the local community and the benefits for the school need to be made clear. It is essential to work closely with the school to find out how the scheme could best meet their needs and enhance their site. Educating staff, giving them a chance to input on the designs and taking their views on board, is key to turning the SuDS features into valued assets that will be cared for and maintained for years to come.

Engaging Pupils

Delivering a SuDS project in a school provides an invaluable opportunity for spreading the 'SuDS not floods' message. There is a range of opportunities for linking SuDS activities to the national curriculum and class topics. By carrying out activities with pupils, there is real potential to cultivate an understanding of surface water flooding and the need for SuDS. This is a message they can take home and share with others but also carry with them as they become the next generation of decision makers.

Engaging the Public

As well as reaching the community through pupils, it is important to directly engage the public. While SuDS provide real benefits for the local area, they often go unnoticed or unrecognised. More needs to be done to raise awareness by delivering events, activities and initiatives that raise the profile of SuDS. This is a great way of garnering support for the project itself and for SuDS more widely.

To maximise the opportunities in this project for raising SuDS awareness, an Education and Community Outreach Officer was appointed, engaging each school, its staff, pupils and the wider community.

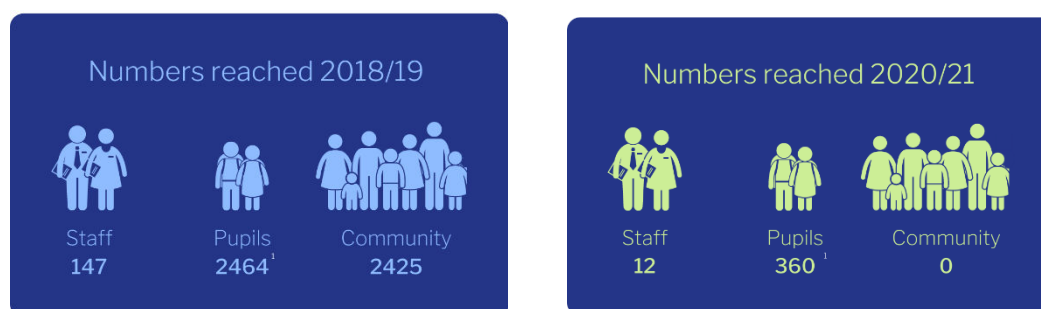


Figure 1: Numbers reached with SuDS in Sutton's School engagement activities¹

The 2018/19 figures are for the first phase of the project in which features were delivered in two schools. Additional outreach took place in surrounding schools. The second phase of the project (2020/2021) had four participating schools. Unfortunately, the programme of activities for this phase was disrupted by Covid 19.

Engaging Staff

Recruiting Schools

To get schools on board with SiSS, the initial outreach included three key messages:

1. No financial contribution was needed from the school
2. A brief explanation of how the scheme would benefit the local area
3. Examples of how the scheme could provide benefits for the school.

This is the procedure that was followed:

- Telephoned the school's main number to get details of an appropriate contact
- Sent an email to the contact with the information above
- Arranged a meeting with interested parties
- Carried out an initial walk-around to determine the feasibility of SuDS on site.

A total of 16 schools were contacted, 12 responded and arranged follow up meetings. Every school met with was keen to be involved. Clearly, there are real opportunities to work with schools on SuDS projects.

Involving the Staff

A successful SuDS in schools project needs commitment from the school at management level but also needs to engage staff more widely. Input from a range of staff members is useful for the design process. For example, mealtime supervisors may have information on how the playground is used during playtime. Teaching staff can provide insight on how the site is used for education activities and where this could be developed. Site managers may have information on existing services and access requirements. Each type of

¹ Numbers have been adjusted to avoid double counting

site user can provide useful information for ensuring the designed scheme is a success. Including staff can also encourage advocates to come forward who can then help promote the project and facilitate school activities.

The SuDS in Sutton's Schools project had 3 key design phases. Figure 2 outlines how staff input fed into the designs.

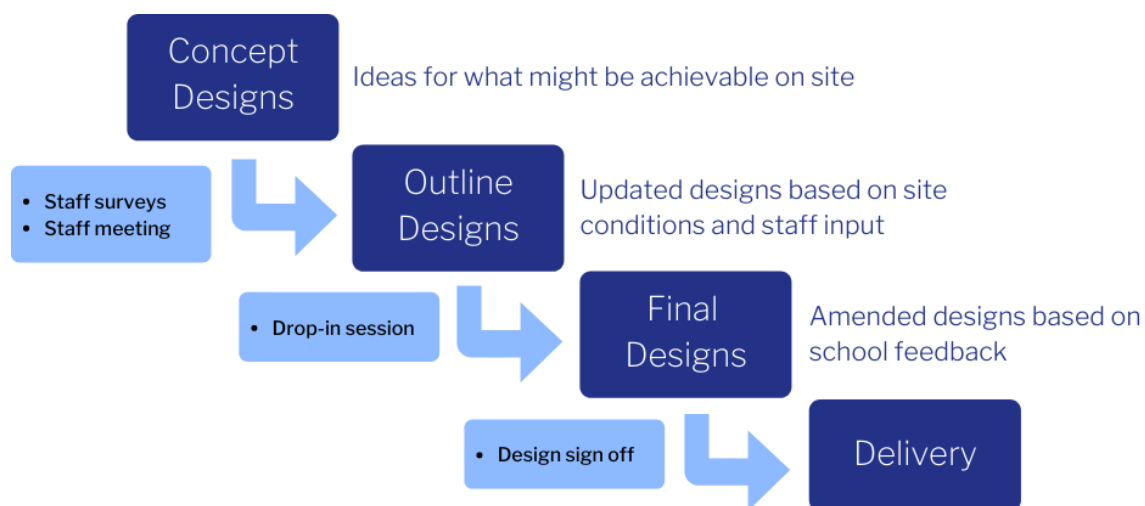


Figure 2: Integrating staff input with the design process.

Staff Surveys

One way of reaching a whole cross section of staff members is to send out a survey. These were distributed both electronically and as paper copies (posting these in individual's pigeon holes), with a better return on the paper copies. This is likely because most jobs within a school are not desk-based and there is less reliance on electronic forms of communication. However, this can vary from school to school.

The surveys covered:

1. Conditions - highlight any areas of the playground with existing drainage problems
2. Constraints - summarise how the playground is currently being used
3. Opportunities - identify areas for improvement

The survey can be found in the Appendix. All responses were summarised and provided to the project Design Team.

TIP: Google Forms is a useful way of gathering data electronically and provides instant graphs and data summaries for analysing the results. Returned paper copies can be entered manually so they can be easily incorporated into the analysis.

Staff Meeting

Leading a staff meeting about the project generated widespread enthusiasm among staff. The staff meetings were run early on in the project. This had two advantages:

1. Staff input could be taken on board at early stages of the design process
2. Teachers were better equipped to support the pupil sessions that followed.

Once the principles of SuDS were explained, staff were encouraged to come up with their own ideas around how SuDS could provide specific benefits for their school. For example, the suggestion from one teacher was that the two planters at the front of the school were moved away from the wall so that pupils could access them from all sides. This small tweak to the design meant that a whole class could utilise the planters at once,

for planting sessions, micro-habitat investigations or any number of outdoor lessons. School staff are able to come up with ideas and constraints that might not be apparent to outsiders.

Design Drop-in Session

It is essential that staff have a chance to respond to the designs developed from their input. For this project, a staff drop-in session was delivered whereby designs were displayed, questions were answered and comments were added using post-it notes. The display was left up for a week so further comments could be added.

This activity highlighted potential conflicts and opportunities that hadn't previously been picked up. For example, a planter had to be relocated because it was against a wall that was used for kickabouts. Benches were added to another planter as it was in an area where pupils often sit to eat their lunch. It is worth circulating the designs beyond school management because the members of staff who sign off the designs may not be familiar with all aspects of how the site is used.



Figure 3: Staff responses to designs.



Figure 4 and 5: Planter with pupil access and planters with benches.

Lesson Learnt

Be upfront about what your project can deliver and what is required of the school

- In an attempt to get the school on board, it can be easy to oversell the onsite benefits – be realistic about what can be achieved within budget
- Schools need to be aware that there are restrictions in terms of where SuDS can go
- SuDS require maintenance – make sure the school is willing to commit to this

Use visuals to communicate. Photographs, illustrations and mood boards are much more engaging than technical drawings or wordy explanations

Integrate staff engagement with the design process. Early engagement ensures designs reflect the needs of the school but it also makes it difficult to maintain the initial enthusiasm through to delivery. Time activities carefully.

Engaging Pupils

Having an Education and Community Outreach Officer with teaching experience, meant activities with links to the national curriculum could be developed for a range of year groups. With the majority of the schools involved in the project primary schools, a key set of activities were created for this age range and were delivered to all participating primary schools. This offer included:

- An introductory assembly
- A hands-on introduction session with a specified group of children
- A follow up session to acquire design input
- A planting day

In addition to these key activities, a number of extra initiatives and events were trialled. These included:

- An offsite visit to a completed SuDS project
- A SuDS Champions scheme
- Creating a SuDS animation
- Creating SuDS Lego models
- A secondary school project

The opportunities to work with pupils are wide ranging. It is beneficial to have a teacher at the school you can collaborate with to find new and creative ways to make links with school activities.

Table 1: Pupils engaged in each activity.

Activity	Groups engaged	Number of pupils reached
Introductory assembly	4 schools	2327
Key pupil activities (the series of lessons were all delivered to the same group)	3 x Year 4 Classes 1 Eco-Council 1 School Council	143
Offsite visit	2 x School Councils	41
SuDS Champions scheme	2 x Eco Councils	51
SuDS animation project	4 x Year 3 Classes	112
SuDS Lego models	A selected group	8
Secondary school project	6 x Year 9 Classes	140

What term should be used for SuDS?

We chose to use the term SuDS throughout the project – rather than replacing it with something like rainscapes. While the term itself is not self-explanatory, it is easy to remember and, when used regularly in the slogan ‘SuDS not floods’ it conveys more precisely the main objective of a SuDS scheme.

An initial explanation of what SuDS stands for (sustainable drainage systems) was provided but after that, the pupils were very accepting of the SuDS term and consistently showed they understood that it referred to features that saved rain from the drain.

In addition, SuDS is included within the geography syllabus at A-level. By using the technical term rather than something that is simplified, pupils will be able to make that link between real-life features and textbook examples.

Key Pupil Activities

SuDS Assembly

The assembly was designed to last 30 minutes, have a clear narrative that children could follow and include audience participation. Any longer than 30 minutes, it could be difficult to slot it into the teaching day and children would struggle to remain attentive while sitting on the floor. Any shorter and it would be difficult to communicate the key messaging. The theme of the assembly was 'The Journey of a Raindrop' getting children to think about what happens to a raindrop after it falls from the sky.



Figure 6: The Education and Community Outreach Officer delivering an assembly.

Introductory Lesson

The introductory lesson is a great way to reinforce and embed the concepts introduced in the assembly. It was a crucial step in ensuring children understood the principles of SuDS before adding their input on the designs. Essentially this session involved creating a 'natural' landscape and an 'urban' landscape in a seed tray to compare and contrast what happens to rainwater when it falls on each one. This activity introduces the idea of runoff. Where does it go? What happens when there is too much?

Pupil Design Input Lesson

The follow up lesson focused on what could be done at their school to reduce the amount of runoff, giving children the chance to design their own SuDS features. Not only does a design input session empower pupils, giving them a chance to directly influence the designs, but it is also a useful way of evaluating how well they have understood the principles of SuDS. Their ideas influenced the final designs in a number of ways including the choice of materials used, the various planting schemes and added features.

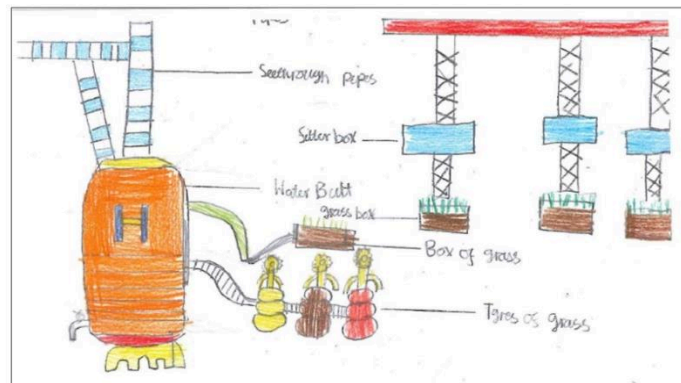


Figure 7 and 8: Pupils participating in the Introduction lesson and design input from one of the pupils.

Planting Day

These lessons were then followed up by a Planting Day, giving children the opportunity to contribute to the completed SuDS scheme. Most children had never gardened before and were extremely excited to be given the opportunity. The activity was run as follows:

1. The plants were set out in position before the children arrived
2. The session leader modelled how to plant one
3. Children were assigned plants to work on in pairs
4. The pairs moved on to the next available plant when ready until all were completed

This can be over in a whirlwind, depending on the numbers involved. If there is time, it is nice to conclude the session with celebratory refreshments and a 'hand over' of the scheme to them as future caretakers.



Figures 9, 10, and 11: Planting Day at Muschamp Primary.

Extra Pupil Activities

Offsite Visit

Prior to installing SuDS in schools, a rain garden was built at the local council offices. As part of a celebration of its completion, a group of pupils from two different local schools involved in the project were invited on a school trip to see the rain garden and engage in some fun activities on site. These activities included:

- An introduction to the rain garden
- Planting a bulb as part of the rain garden
- Creating a rain drop emoji in response to the rain garden
- A ‘test your knowledge’ activity involving pipettes of water

The benefit of this session was that it connected the children with a real life demonstration of SuDS in the local area – many children revisited the garden after school to show it to their parents.



Figures 12, 13 and 14: Denmark Road Rain Garden Open Day.

SuDS Champions Sessions

To engage a wider audience, a SuDS Champions scheme was offered to the school’s Eco Councils. Instead of just the series of two classroom sessions, this involved four sessions followed by a celebration assembly. The four sessions were:

- Downpipes and Drains – an outdoor game
- A Study of Rainwater – the same as the introductory lesson listed above
- Pollution Solution – a scientific test to see how SuDS can filter runoff
- A Poster Drawing Session – to create posters to be displayed around the school



Figure 15: SuDS Champions.

In the celebration assembly, each child was rewarded with a SuDS Champion certificate and given a 'Mini Green Roof Shed' kit. The aim of this initiative was to establish a group of children in the school who would pass on what they learned to the rest of the school by reporting on their activities after each session. The take-home kits facilitated the spread of the 'SuDS not floods' message from school to home.

SuDS Lego Models

At one school, a Lego workshop was offered to pupils from participating classes who showed initiative, targeting children who don't always shine academically. In this workshop, children worked in small groups to create pairs of houses each with the same footprint – one with SuDS features added and one without. By filling the SuDS features with sponges, the models could be tested to see the effect SuDS can have during a rainfall event.



Figure 16. Lego models

The resulting SuDS models were subsequently used at events to attract and engage communities. At these events, participants of the session brought friends and family to the stall to show off their work and explain what they had made. This was fantastic evidence of the workshop's success.

SuDS Animation Project

Another useful tool for public engagement has been the SuDS animation. This project was devised with an enthusiastic Year 3 teacher who wanted to find a way for her year group to become involved with the project. They were just about to start a unit on the Victorians, when animation was invented, providing a good link to connect SuDS to their classroom topic.

An artist with experience in delivering animation workshops was engaged and the sessions were co-delivered with the Education and Community Outreach Officer. The artist did an amazing job of developing a method for including artwork from every child from a total of four Year 3 classes. Involving this many children did mean that the finished film was slightly longer than it needed to be but it was worth it to ensure no child felt left out.

The animation was uploaded to YouTube so pupils could share it with their parents. Within the first year, it had over 1000 views. It has also been a useful resource to showcase the project to others, to recruit new schools to the project and to introduce SuDS at public events. It can be viewed [here](#).

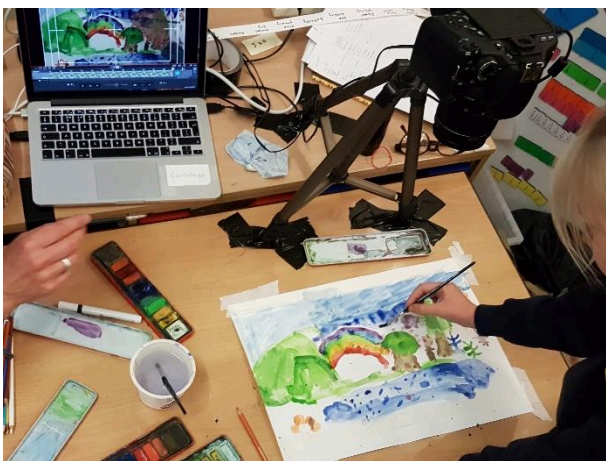


Figure 17 and 18: SuDS animation sessions.

Secondary School Offer

A Key Stage 3 project was developed with a local secondary school. The aim was to provide an example of applied geography skills to Year 9 classes in advance of them choosing their GCSEs. The project required pupils to work in groups to design a SuDS scheme for a specified area of their playground over five weekly sessions. The end-product was a mood board display and a presentation which was jointly judged against a set of criteria by the class teacher and the Education and Community Outreach Officer. This session was rebooked by the Geography lead at the school for two classes per term for a full year.

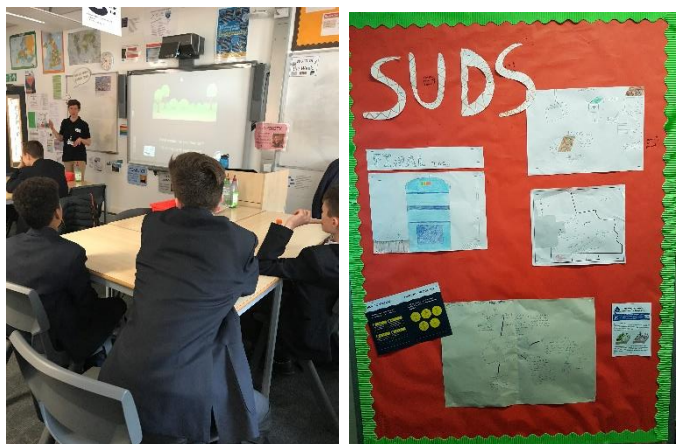


Figure 19 and 20: Secondary school sessions.

Lesson Learnt

- **Work with the school to find a suitable group of children to work with.** Involving one class may be difficult as many schools have multiple classes in each year group. Involving cross-sections from different classes – like a school council – may limit the time you have to work with the pupils as they would be missing lessons to take part. Bear this in mind when planning sessions.
- **Provide support materials for children who might struggle to engage.** Some children didn't know where to begin during the design session. While it is important not to stifle creativity, it is helpful to provide inspirational images and templates for those that need them.
- **SuDS can be linked to the curriculum in creative ways.** Science and geography provide obvious links but there are a number of ways to link SuDS indirectly to topics and activities taking place in schools.
- **There is scope for developing opportunities in secondary schools.** Establishing a link with a member of staff is key for developing these opportunities.

Engaging Communities

Promotion

Project Leaflet

For this project, a leaflet was designed that could be distributed to a range of audiences: school staff to inform them about the project; participating pupils as something to take home and to members of the public at events. It included:

- A basic introduction to SuDS and why they are needed
- A list of additional benefits that SuDS can provide
- Guidance on what individuals can do at home
- A link to find out more

It was designed with child-friendly images, created by a local children's illustrator which gave it mass appeal.

Online Materials

Early on in the project, webpages were added to the South East Rivers Trust website. They provided similar information to the leaflet but in more detail, with added links to case studies and more detailed guidance on actions individuals could take to reduce surface water flooding. Regular blogs were also published to celebrate project successes and to promote the 'SuDS not floods' message.

During Covid, the Trust produced a range of resources to support home education. One of the units was on SuDS and included a series of six activities about rainwater and how it can be managed more effectively. (Series 4, Rainwater can be found here: www.southeastriverstrust.org/river-education-home-activities/)

Interpretation Boards

Each site where SuDS were built had a sign installed that explained the features in a child-friendly way. These were mounted in a prominent location and were designed to catch the attention of site visitors. By using consistent design features across all the signs (illustration style, font, colours, graphics), the different sites could all be easily linked to the same project.



Figure 21: Rain garden interpretation board.

As stated earlier, it is easy for SuDS features to go unnoticed. A quality sign is a useful tool for engaging passers-by even long after the features have been installed. It also will ensure that future site users are aware of the SuDS on site and consider these in any site alterations. To maximise the impact, it is important to develop a clear design brief and have interpretation boards professionally designed.

Events

School Events

One way of reaching out to the wider school community is to have a presence at any school event happening during the project, such as Summer Fairs. The interactive Lego SuDS models were incredibly useful for these events. The designs were displayed and leaflets distributed. At each school event attended, over 120 people were engaged.



Figure 22, 23, 24 and 25: Stalls at both school and public events.

Public Events

There was also the opportunity to have a presence at a number of local community events such as the Carshalton Environment Fair and the Big Bang Festival. Creating an engaging stall about sustainable drainage systems for public events can be a challenge. A range of activities and displays were trialled.



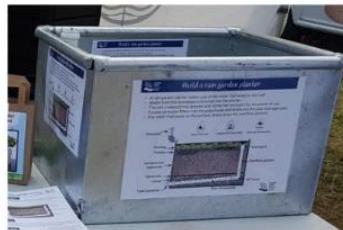
SuDS Lego models

These were by far the most successful engagement tool. Lego is great at attracting the attention of passers by and water play makes the experience rewarding for kids. This often resulted in crowds at the stall and families remaining for significant amounts of time.



SuDS Cress Shed kits

Mini-green roof shed kits were developed and given away (by donation) - a great take away item. SuDS leaflets were included in the kits which helped capture those who spent a limited time at the stall.



Demonstration SuDS Planter

The planter provided a practical idea of what people could do themselves at home - a great way of engaging the parents while children were interacting with the Lego houses.



A purpose built SuDS model

Because of its size it can engage several people at once however it is not very interactive so the appeal is limited and it is cumbersome to set up.



SuDS experiments

Various ways to demonstrate how soil can effectively store and filter water were trialled. These activities were messy, difficult to manage and were not successful in engaging all.

Workshops

During activities at public events, it was found that many people supported the idea of SuDS in principle but lacked the knowledge or skills to apply these principles at home. To target this group, two community workshops were delivered.

The first one was offered to the public as part of the Wandle Fortnight – a festival of events in the Wandle catchment. This included a talk on the specific measures that were applicable for homes and the steps to take to install them. It was followed by a hands-on session, whereby people worked in groups to assemble demonstration SuDS planters. While it was met with enthusiasm, only 11 people attended and despite requests, no photos or emails of actions resulting from the workshop came through.



Figure 26, 27 and 28: Workshop in a school setting.

For the second workshop, 21 people attended. It was run at one of the participating schools and made more practical. Participants actually helped install planters on site – assembling them, filling them with the correct layers of materials and adding plants. By running it in this way, it was possible to guarantee that at least four planters were installed as a result of the workshop.

Lesson Learned

- **When running a stall at an event, don't overcomplicate it.** You are limited in the number of people you can engage directly so ensure people can get something out of the stall even if you don't have a chance to interact with them.

There is no easy way to evaluate the success of public engagement. Using clickers can help log numbers of people engaged but we were unable to assess whether people changed their attitudes or behaviour as a result. Methods for this need development.

Summary

Not all SuDS projects will be able to have their own dedicated Education and Community Outreach Officer. At the start of the project, guidance and resources available for this type of activity were limited. The scale of this project has meant that a good range of activities could be trialled.

For the staff sessions, the staff meeting generated the most enthusiasm and promoted the project among the most members of staff. Staff meetings generated about 60% participation from staff whereas the staff surveys reached about 25% and the drop-in about 40%. However, staff meetings primarily target teaching staff and without the surveys and drop-in sessions, other staff (such as mealtime supervisors) would not have been reached. It is beneficial to carry out the whole series of activities to encourage ongoing engagement and to ensure a range of staff members are included.

When working with pupils, the primary aim is to teach the 'SuDS not floods' message. Where this was most effective was when there was the opportunity to carry out a series of sessions with pupils. Each series included assessment activities to evaluate how well the message had been understood.

1. **Key Pupil Activities** – SuDS principles are taught in the introduction session and applied in the design session. Approximately 90% of the children's drawings included features that captured rainwater demonstrating a good understanding of SuDS.
2. **SuDS Champion Sessions** – Pupils applied SuDS principles in the poster design session. Approximately 80% of the pupils were able to do this effectively. The younger children needed support.
3. **SuDS Animation Session** – Collaboratively the pupils created a script that showed a clear understanding of the benefits SuDS can bring.
4. **Secondary School Sessions** – Assessed in the final mood boards and presentations. Classes of different abilities were engaged. There was a clear difference between the higher and lower ability groups. The lower ability were very reliant on supporting material and mostly repeated exactly what had been taught. The higher ability were able to put things into their own words and apply concepts much more effectively.

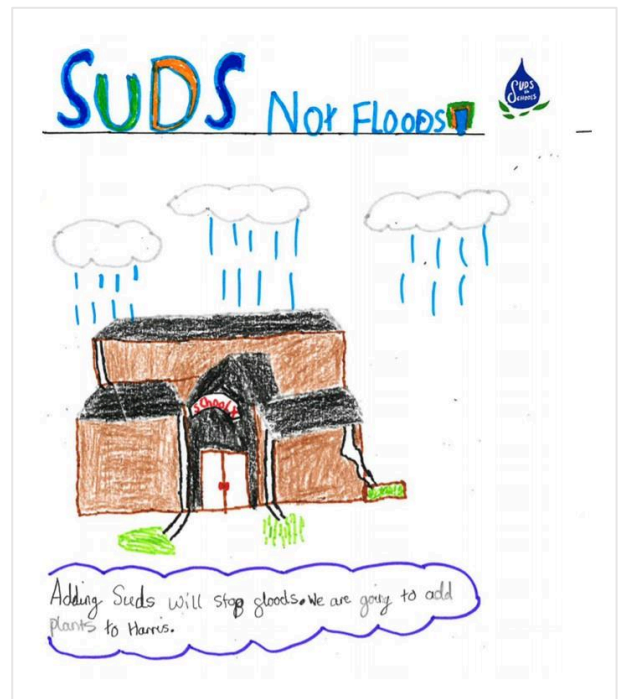


Figure 29. A pupil's SuDS poster

At a minimum, it is worth carrying out the key pupil activities when working on a SuDS in schools project. The other sessions added value to the project in a number of ways. The Lego session and animation sessions were fun activities that created useful resources that will continue to be used to promote SuDS. The secondary sessions worked well for this particular school. Some development is needed to ensure these sessions could be applied more widely.

To raise awareness of SuDS in the community, it is useful to have a presence at local events, create online material and interpretation boards to ensure the SuDS do not go unnoticed. Engaging the local community at events, is very effective at generating support for SuDS because the issue is localised and made relevant to those engaged. The online resources provide more in depth material and resources for people to access. Interpretation boards draw attention to installed SuDS and will continue to engage the community long after project completion.

Facilitating behavioural change is a lot more challenging. More in depth activities are needed. Within this project, workshops were trialled however, these need further development to ensure follow up actions are taken.

At the South East Rivers Trust, we now have a working methodology for delivering SuDS education and engagement. By outlining the activities here, other projects can benefit from the expertise gained. However, this is by no means a comprehensive list of ways to engage staff, pupils and the wider community. The hope is, that others will take up the mantle adding new and inspiring ways of engaging a range of audiences with SuDS.

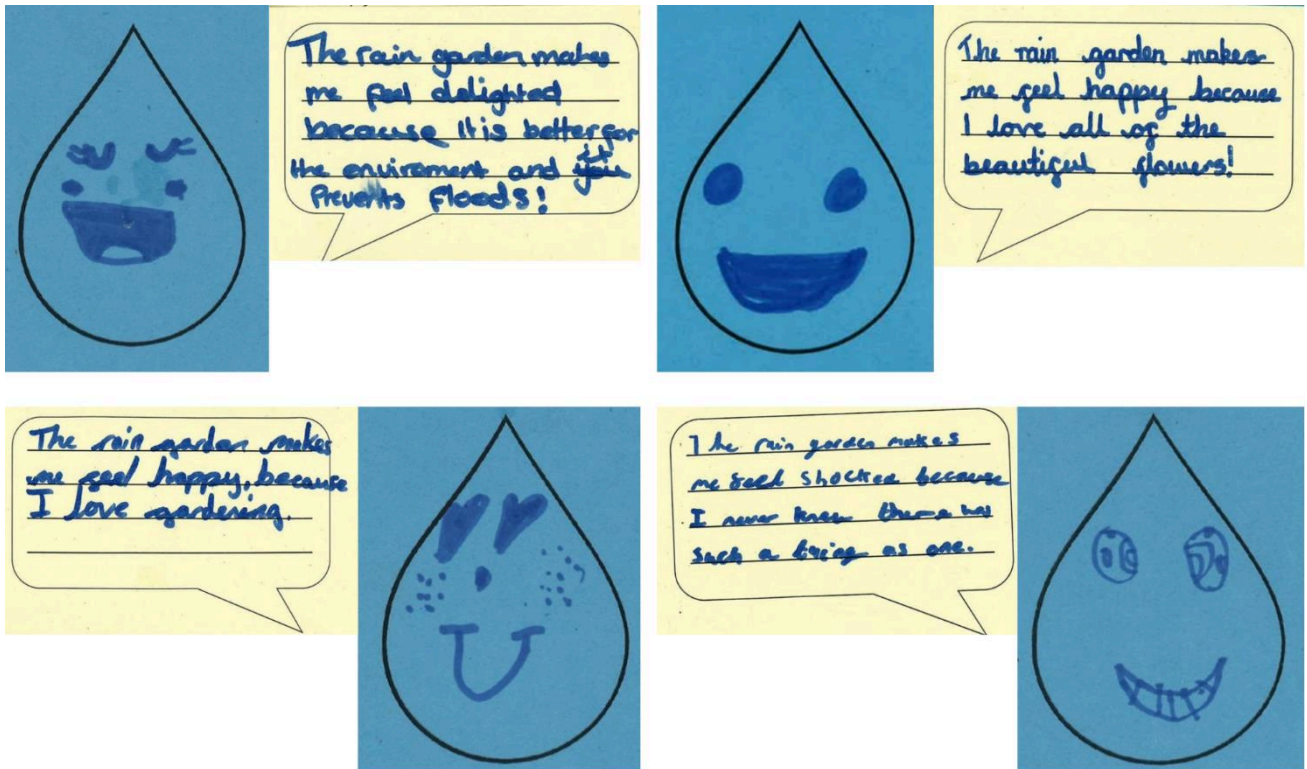


Figure 30. Raindrop emojis.

Appendix

SuDS in Sutton's Schools, Staff Survey

The aim of the SuDS in Sutton's Schools project is to implement features on site that will reduce flood risks for the local area. We also hope to enhance the facilities on site and will be looking for ways we can integrate the needs of the school with the SuDS project. Please fill in this questionnaire so your views can be taken into consideration when designing the scheme. It is anonymous and is for our information only.

School: _____

Role within the school: _____

Rate these features of your school grounds: 1 = poor and 5 = excellent	1 poor	2	3	4	5 excellent
An active play area including structures for running and climbing on					
A quiet area for pupils to engage in less active play					
Seating					
Shelter from the sun or rain					
A sensory garden (a garden with things that feel, look, smell, taste and sound nice)					
A water play area					
A gardening area for pupils					
Ornamental gardens – any planting, flower beds or borders maintained by staff					
A wildlife area					
A pond or wetland					

Please list here, existing features of the playground that you like and would like to be maintained (be specific):

SuDS in Sutton's Schools, Staff Survey

As part of the SuDS in Sutton's Schools project we want to improve any drainage issues you have that impact the everyday running of the school. To achieve this, we need more information about any flooding you are experiencing. On the map below, could you please mark the areas where you regularly experience puddling or drainage issues.



Approximately how frequently are these issues experienced on site?

A. More than once a month (all year round)

B. More than once a month (winter only)

C. Less than once a month

SuDS in Sutton's Schools, Staff Survey

What areas would you like to be improved? Put these features in order from 1-10. 1 – the feature you would most like improved 10 – the feature that you would least like improved	Order from 1-10
An active play area including structures for running and climbing on	
A quiet area for pupils to engage in less active play	
Seating	
Shelter from the sun or rain	
A sensory garden (a garden with things that feel, look, smell, taste and sound nice)	
A water play area	
A gardening area for pupils	
Ornamental gardens – any planting, flower beds or borders maintained by staff	
A wildlife area	
A pond or wetland	

Please list here, additional features that you would like improved upon or added to your grounds (be specific):

Any other comments:

Thank you for your time.

Acknowledgements



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